

Serial No.: 10/550,110
Filed: September 19, 2005

Complete set of claims

1. (original) An auxiliary for fine pattern formation comprising a modified polyvinyl alcohol protected with a protecting group, a water-soluble crosslinking agent, and water or a mixed solvent of water and a water-soluble organic solvent, wherein the amount of high-molecular weight body components of the modified polyvinyl alcohol protected with a protecting group, which has a weight-average molecular weight of 250,000 or more as determined by polyethylene glycol standards according to a gel permeation chromatography, is 1000 ppm or less in the modified polyvinyl alcohol.
2. (original) The auxiliary for fine pattern formation according to claim 1, wherein the modified polyvinyl alcohol protected with a protecting group is one that was treated so as to remove acid components and metal ions therefrom.
3. (currently amended) A modified polyvinyl alcohol protected with a protecting group, wherein the amount of high-molecular weight body components having weight-average molecular weight of 250,000 or more as determined by polyethylene glycol standards according to a gel permeation chromatography is 1,000 ppm or less and further where the acid components and metal ions are removed using an ion exchange resin.
4. (withdrawn) A method of producing the modified polyvinyl alcohol protected with a protecting group according to claim 3, wherein a solution of the modified polyvinyl alcohol protected with a protecting group is heat-treated at the temperature of 80°C or more.

Serial No.: 10/550,110
Filed: September 19, 2005

5. (withdrawn) The method of producing modified polyvinyl alcohol protected with a protecting group according to claim 4, wherein the solution of modified polyvinyl alcohol protected with a protecting group is heat-treated after a step of removing acid components and metal ions from the solution.
6. (previously presented) The auxiliary of claim 1, where the protecting group is selected from a formyl group, an acetyl group, a malonyl group, a benzoyl group, a cinnamoyl group, a formal group, an acetal group, a butyral group, a t-butoxycarbonyl group and an ethoxyethylene group.
7. (previously presented) The auxiliary of claim 1, where the water-soluble crosslinking agent is selected from melamine derivatives, guanamine derivatives, urea derivatives, glycol uril, and alkoxy alkylated amino resin.
8. (previously presented) The auxiliary of claim 1, where the water-soluble organic solvent is capable of being dissolved at 0.1 % by weight or more in water.
9. (previously presented) The auxiliary of claim 1, where the water-soluble organic solvent is selected from alcohols, ketones, esters, ethylene glycol monoalkyl ethers, ethylene glycol monoalkyl ether acetates, propylene glycol monoalkyl ethers, propylene glycol monoalkyl ether acetates, lactic esters, aromatic hydrocarbons, amides, lactones and mixtures thereof.
10. (previously presented) The auxiliary of claim 1, where the modified polyvinyl alcohol protected with a protecting group is heat treated after removing acid components and metal ions from the solution.
11. (previously presented) The auxiliary of claim 1, where the modified polyvinyl alcohol protected with a protecting group is heat treated at a temperature of 80°C or more.

Serial No.: 10/550,110
Filed: September 19, 2005

12. (previously presented) The auxiliary of claim 2, where the acid components and metal ions are removed using an ion exchange resin.

13. (previously presented) The modified polyvinyl alcohol of claim 3, where the protecting group is selected from a formyl group, an acetyl group, a malonyl group, a benzoyl group, a cinnamoyl group, a formal group, an acetal group, a butyral group, a t-butoxycarbonyl group and an ethoxyethylene group.

14. (canceled) The modified polyvinyl alcohol of claim 3, where the acid components and metal ions are removed using an ion exchange resin.

15. (previously presented) The modified polyvinyl alcohol of claim 3, where the modified polyvinyl alcohol is heat treated after removing acid components and metal ions from the solution.

16. (previously presented) The modified polyvinyl alcohol of claim 15, where the modified polyvinyl alcohol is heat treated at a temperature of 80°C or more.

17. (withdrawn) The method of claim 4, where the protecting group is selected from a formyl group, an acetyl group, a malonyl group, a benzoyl group, a cinnamoyl group, a formal group, an acetal group, a butyral group, a t-butoxycarbonyl group and an ethoxyethylene group.

18. (withdrawn) The method of claim 4, where the solution of modified polyvinyl alcohol comprises water.

19. (withdrawn) The method of claim 5, where the step of removing the acid components and metal ions comprises treating the modified polyvinyl alcohol with an ion exchange resin.